

ABSTRACT OF THE DISCLOSURE

Disclosed herein are a highly porous ceramic having a high porosity of not less than 60% and a pore density of not less than  $10^8$  pores/cm<sup>3</sup> fabricated from expandable microspheres and a preceramic polymer, and a method for fabricating highly porous ceramic. The method for fabricating highly porous ceramic from expandable microspheres and a preceramic polymer comprises the steps of: homogeneously mixing a preceramic polymer powder and expandable hollow microspheres, if necessary, a ceramic powder, and molding the mixture to form a molded body; heating the molded body to expand it; curing the expanded molded body; and pyrolyzing the cured molded body.

Since the highly porous ceramic has a higher porosity and pore density than conventional porous ceramics, it can be suitably used for various high temperature structure materials, kiln furniture, bulletproof materials, shock-absorbing materials, insulating materials, refractory materials, lightweight structure materials, etc.